

Amendments to the Claims:

The text of all pending claims, (including withdrawn claims) is set forth below. Canceled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strike through~~. The status of each claim is indicated with one of (original), (currently amended), (canceled), (withdrawn), (new), (previously presented), or (not entered).

Applicant reserves the right to pursue any canceled claims at a later date.

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1 – 14 (canceled)

15. (previously presented) A method for determining oscillations of a rotating blade disc of a turbomachine, comprising:

arranging a substance that emits a light quanta when excited by an external excitation source at a location on the blade disc;

exciting the light emitting substance by the external excitation source to emit the light quanta;

sensing the emitted light quanta by a light sensor; and

evaluating a signal from the sensor to determine the oscillation behavior of the blade disc.

16. (previously presented) The method as claimed in claim 15, wherein the light emitting substance is arranged on a circumferentially closed covering strip structure of the blade disc.

17. (previously presented) The method as claimed in claim 16, further comprising evaluating the signal from the sensor to determine the oscillation behavior of the covering strip structure.

18. (previously presented) The method as claimed in claim 15, wherein the light emitting substance is arranged on a revolving turbine blade of the blade disc.

19. (previously presented) The method as claimed in claim 18, further comprising evaluating the signal from the sensor to determine the oscillation behavior of the turbine blade.

20. (previously presented) The method as claimed in one of claims 15, wherein the light quanta emitting material is applied to the blade disc, the covering strip structure and to at least one turbine blade in the form of a strip.

21. (previously presented) The method as claimed in claim 15, wherein the light quanta emitting substance type is selected from the group consisting of: a fluorescent, a phosphorescent, a radioluminescent, a thermoluminescent, a triboluminescent and/or a photoluminescent.

22. (previously presented) The method as claimed in claim 21, wherein an optical filter is arranged between the blade disc and the sensor.

23. (previously presented) The method as claimed in claim 22, wherein the signal from the sensor is amplified by a photodiode or a photomultiplier prior to evaluation.

24. (currently amended) An apparatus for determining rotating turbine blade disc oscillations, comprising:

a light quanta emitting substance arranged on the blade disc which emits light ~~quant~~quanta when excited by an external radiation source;

a sensor that senses light quanta emitted from the externally excited substance and outputs a signal; and

an evaluation circuit that evaluates the signal from the sensor and determines the oscillation behavior of the blade disc.

25. (previously presented) The apparatus as claimed in claim 24, wherein the light quanta emitting substance is applied to a closed and operatively rotating covering strip structure arranged on the blade disc, and the signal from the sensor is evaluated to determine the oscillation behavior of the covering strip structure.

26. (previously presented) The apparatus as claimed in claim 24, wherein the light quanta emitting substance is applied to a revolving turbine blade of the blade disc, and the signal from the sensor is evaluated to determine the oscillation behavior of the one turbine blade.
27. (previously presented) The apparatus as claimed in claim 26, wherein the light quanta emitting substance is applied in a strip form to the blade disc, to the covering strip structure, and to at least one turbine blade.
28. (previously presented) The apparatus as claimed in claim 27, wherein the light quanta emitting substance type is selected from the group consisting of: fluorescent, phosphorescent, radioluminescent, thermoluminescent, triboluminescent and photoluminescent, and the sensor is an appropriately sensitive sensor to determine emitted light quanta.
29. (previously presented) The apparatus as claimed in claim 24, further comprising an optical filter arranged between the blade disc and the sensor.
30. (previously presented) The apparatus as claimed in claim 29, further comprising a photodiode or a photomultiplier amplifier circuit that amplifies the sensor signal before evaluation.